香港獸醫專科服務

HONG KONG VETERINARY SPECIALTY SERVICES

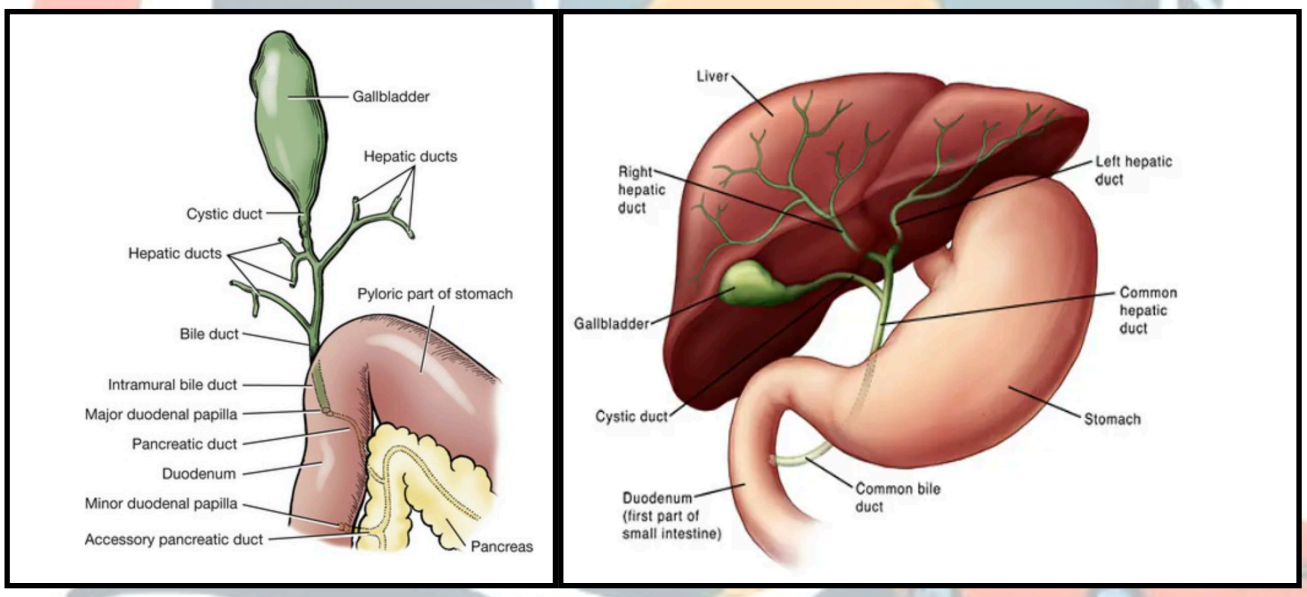
Gallbladder Conditions in Dogs

Quick Take

The gallbladder **stores bile**, a **digestive fluid produced by the liver.**
In dogs, several conditions can affect the gallbladder, the most important being:

- **Gallbladder mucoceles** (very common)
- Gallstones (cholelithiasis)
- Gallbladder inflammation (cholecystitis)
- Gallbladder rupture (life-threatening)
- Obstruction of the bile duct (extrahepatic biliary obstruction)

While **early or mild disease** may sometimes be **medically managed**, **surgery** (typically cholecystectomy — removal of the gallbladder) i**s the recommended and often life-saving treatment** for the majority of significant gallbladder disorders in dogs.
Dogs do very well without a gallbladder, as bile simply flows directly from liver to intestine.



1) What's going on inside?

The gallbladder sits between liver lobes and stores bile. **Bile helps digest fats by releasing into the intestine when a dog eats.**

Gallbladder disorders occur when:

- Bile becomes too thick
- The gallbladder becomes inflamed or overfills
- The bile duct becomes blocked
- Infection enters the biliary system
- The wall degenerates, risking rupture

The **biggest gallbladder danger: Pressure + Inflammation**

If pressure builds up inside the gallbladder (from mucus, stones, or inflammation), the gallbladder can stretch, then **weaken, and finally rupture, spilling bile into the abdomen** — a medical and surgical emergency.

2) Major gallbladder conditions in dogs

A) Gallbladder Mucoceles (most important)

Abnormal sticky mucus accumulates in the gallbladder
Causes blockage and distension
Risk of sudden rupture
Strongly linked to certain breeds: **Shetland Sheepdogs, Cocker Spaniels, Miniature Schnauzers, Pomeranians**
Often associated with **endocrine diseases** (Cushing's, hypothyroidism)
Surgery is the recommended treatment for any clinically significant gallbladder mucocele.

B) Cholelithiasis (Gallstones)

Stones form inside the gallbladder or bile ducts.
They may:

- Cause no symptoms
- Obstruct the bile duct
- Trigger inflammation or infection

If stones cause obstruction → surgery is recommended.

C) Cholecystitis (Gallbladder Inflammation)

Often due to:

- Bacterial infection
- Trauma
- Mucoceles
- Stones

Can lead to bile duct obstruction or rupture.

D) Gallbladder Rupture

A life-threatening emergency.
Causes:

- Untreated mucocele
- Severe inflammation
- Blunt trauma
- Stones or obstruction

Requires **immediate surgery.**

E) Extrahepatic Biliary Obstruction (EHBO)

Anything blocking bile from leaving the liver results in bile backing up.
Common causes:

- Mucocele
- Stones
- Tumours compressing bile duct
- Inflammation of pancreas or duodenum

EHBO can quickly lead to liver damage and sepsis → surgery is typically needed unless reversible inflammation alone is responsible.

3) What owners notice

Signs are often subtle at first:

- Vomiting
- Poor appetite
- Lethargy
- Diarrhoea
- Painful belly
- Yellowing of eyes or gums (jaundice)
- Excessive drinking
- Dark orange urine
- Distended abdomen

With rupture, dogs may collapse, shake, or show signs of shock.

4) How gallbladder disease is diagnosed

A) Blood tests

Often reveal:

- Elevated liver enzymes (ALT, ALP, GGT)
- Increased bilirubin
- Increased cholesterol
- Inflammatory changes

These strongly suggest biliary disease but do NOT diagnose type.

B) Ultrasound

The most important diagnostic tool.
Findings may include:

- “Kiwi-like” pattern = classic mucocele
- Thickened gallbladder wall
- Gallstones
- Free fluid in abdomen (possible rupture)
- Dilated bile duct
- Evidence of obstruction

C) CT scan

Useful when anatomy is unclear or tumours suspected.

D) Bile cultures

If infection present, helps choose the right antibiotics.

E) Surgical exploration
Sometimes the only way to confirm severity or resolve complications.

5) Treatment options

A) Medical management

Used only when:

- No obstruction
- No rupture
- Mild or incidental findings
- Patient stable

- Mucoceles in very early stage with no clinical signs

Treatments include:

- Ursodeoxycholic acid (thin bile)
- SAMe, milk thistle (liver support)
- Antibiotics if infection
- Hormonal disease treatment (Cushing's, hypothyroidism)
- Low-fat diet

Limitations:
Medical therapy cannot reverse a developed mucoceles
High risk of sudden deterioration
Often only buys time until surgery

B) Surgical treatment — Cholecystectomy (gallbladder removal)

The **gold-standard treatment**
Removing the gallbladder in dogs is **safe and curative** for most gallbladder conditions.

Conditions where surgery is recommended:

- Gallbladder mucoceles
- Gallbladder rupture
- Extrahepatic biliary obstruction
- Severely thickened or nonfunctional gallbladder
- Symptomatic gallstones
- Cholecystitis not responding to medical therapy
- Suspicion of cancer

Why surgery is preferred:

- Prevents rupture
- Removes the diseased organ
- Eliminates the risk of recurrent obstruction
- Resolves jaundice in most cases
- High long-term success rates

6) Surgical techniques

Traditional open cholecystectomy

Most widely performed
Allows careful inspection of bile ducts
Surgeon can flush bile duct or remove stones if needed

Laparoscopic cholecystectomy

Minimally invasive version
Shorter recovery time
Requires specialised training
Not suitable for ruptured gallbladders or unstable dogs
Unlike human patients who will be complaining with the signs of abdominal pain and seek a doctor at an early stage, dogs are typically presented quite late in the course of the disease and rarely can benefit of laparoscopic approach.

Bile duct management during surgery, surgeons may need to:

Flush bile duct
Remove stones

Repair bile leakage
Probe to ensure patency
Perform a **biliary rerouting procedure** (rare)

Choledochal stenting:

Often **used in combination with a traditional cholecystectomy,** whenever the common bile duct is partially or completely blocked. It requires a small incision of the duodenum to expose the papilla and can either be temporary (blockage due to severe local inflammation) or permanent (blockage during to a permanent cause such as inflammatory granuloma or tumour). The procedure is longer but HAS TO BE DONE in selected cases. Failure to do it will have significant impact on the outcome. Your surgeon needs to be experienced enough to do that step whenever needed.

Choledochotomy:

Whenever the common **bile duct is blocked** and **stenting is not possible**, the common bile duct will be **directly reapposed to the duodenum.** Requires excellent surgical technique and some magnification (surgical loupes). Once again, whoever attempts cholecystectomy should be prepared to move to this alternative option and should have the surgical expertise for it as it can be a life-saving option

Biliary diversion techniques:

Less frequently used. Whenever **irreversible damage to the terminal part of the biliary tree** has occurred: The **gallbladder** (if healthy enough) can be **opened and sutured back directly to the duodenum or jejunum** depending on the surgeon's preference. Requires a good surgical technique and expertise of a specialist.

The message to take home is that whoever performs a cholecystectomy should be able to move to any of these other options if he wants to adapt to the situation found in theatre. Failure to do so will lead to failure and need for revision/death.

7) Outcomes and prognosis

For Gallbladder Mucoceles

Dogs undergoing cholecystectomy before rupture have: Survival rates of **85–95%**
Excellent long-term quality of life

After rupture:: Survival decreases to **50–70%**, depending on severity of sepsis.

For Gallstones causing obstruction

If gallbladder is removed and duct flow is restored → very good outcome
Recurrence is rare after surgery

For Cholecystitis

Good outcomes once infection and obstruction are resolved surgically
Cultures guide antibiotic therapy

For EHBO

Outcome depends on:
Underlying cause
Whether bile duct is still viable
Duration of obstruction

Dogs without a gallbladder

Dogs live completely normal lives without a gallbladder.
Bile flows continuously into the intestine and digestion adapts naturally.

8) Complications and realistic rates

Complication	Approx. rate	Notes
Leakage from bile duct	<5–10%	Serious but rare with experienced surgeons
Anesthetic risk	Variable	Increased for jaundiced or septic dogs
Infection/sepsis	10–20%	Higher if gallbladder ruptured
Bleeding	<10%	Gallbladder is near major vessels
Pancreatitis	<10%	Post-op inflammation
Death perioperatively	5–15%	Strongly influenced by pre-op condition

The most **critical factor is timing. Dogs treated surgically before rupture or severe obstruction have far better outcomes. There is currently no evidence that medical management will either cure or prevent eventual rupture. The vast majority of the gallbladder mucoceles still progress into a late stage with rupture and will have a worse prognosis and higher cost of hospitalisation after being unnecessarily delayed medically.**

9) Recovery and aftercare

First 24–48 hours (hospital)

- IV fluids
- Pain relief
- Antibiotics
- Monitoring for bile leakage
- Recheck liver values

At home (2–4 weeks)

- Strict rest
- Pain medications
- Antibiotics if indicated
- E-collar to protect incision
- Low-fat diet recommended initially
- Watch for vomiting or yellowing of eyes (urgent recheck)

Follow-up

- Recheck in 7–10 days
- Repeat liver bloodwork in 2–4 weeks
- Ultrasound after 4 weeks of ongoing medical management

Long-term lifestyle

- Most dogs need:
- Normal diet
- Occasional blood checks
- Monitoring of any concurrent endocrine disease

- No long-term medications are required because dogs function normally without a gallbladder.

10) Selected Veterinary References

- ACVS – Gallbladder Mucocele in Dogs
- VCA Hospitals – Gallbladder Disease in Dogs
- Fossum, T.: Small Animal Surgery (5th Ed.) – Chapters on hepatobiliary surgery
- Pike & Ritt, Vet Clin North Am Small Anim Pract – Gallbladder mucoceles: diagnosis and treatment
- Jaffey et al., J Vet Intern Med – Survival and risk factors in dogs with gallbladder mucocele
- Mayhew et al., Vet Surg – Laparoscopic cholecystectomy in dogs

Bottom Line

Gallbladder disease in dogs includes mucoceles, stones, inflammation, rupture, and obstruction.
Surgery (cholecystectomy) is the safest and most effective treatment for most clinically significant gallbladder conditions.
Dogs tolerate gallbladder removal extremely well and usually make excellent recoveries when treated promptly.
Early diagnosis and timely surgical intervention dramatically improve survival and long-term quality of life.
Medical management for GB mucoceles should only be attempted in order to prepare a patient for surgery and not as a potential cure.